

Parasitic on *Halictus* (*Chloralictus*) *sparsus* Rob. at Mound and Logansport, La.

ANNOUNCEMENT.

The descriptions given herewith are all very short, but sufficient to establish the genera. The complete revision of the group contains full descriptions of all species and many new species throughout the entire order.

DESCRIPTIONS OF NORTH AMERICAN TINEINA.

By AUGUST BUSCK.

***Atteva edithella*, n. sp.**

Labial palpi black, sprinkled with light yellow at base and on exterior side. Antennæ purplish black. Thorax golden ochre-yellow, with two straw-yellow spots followed by two dark purple dots; collar dark purple; underside of thorax dark purple, with large straw-yellow spots. Ground color of fore wings light straw-yellow, with dark blue markings, some of which enclose ochre-yellow spots; entire costal edge dark blue; extreme base of wings ochre-yellow, limited by a transverse, irregular dark-blue line, which emits a short, slightly forked central spur; at basal fourth is an irregular, transverse, dark-blue fascia, or rather, two dark-blue lines coalescent in the middle of the wing and on costa, and enclosing two ochre-yellow spots, one shortly below costal edge and one on the dorsal edge; on the middle of the wing is another narrow dark-blue fascia, enclosing a small ochre-yellow dot near costa and dividing into a fork near dorsal edge, where it encloses a large ochre-yellow dorsal spot; at apical third begins a transverse dark-blue line which encloses a small round ochre-yellow spot shortly below costa and then becomes attenuate and ends before reaching the dorsal edge; a little before tornus is a large dark-blue dorsal spot, enclosing a round ochre-yellow dot; apex dark blue, with an ochre-yellow spot; between and connecting these larger margins are several narrow transverse dark-blue lines, connected with short cross bars of the same color and forming a net-work on the straw-yellow ground color. Hind wings dark fuscous, semitransparent, with dark veins and black edge. Abdomen purplish black above, with a ventral row of five transverse light-yellow spots. Legs dark purplish, with light-yellow annulations.

Alar expanse, 26 mm.

Maverick Co., Texas (J. D. Mitchell).

Type.—No. 11362, U. S. National Museum.

A very distinct, beautiful species intermediate between the Cuban species *A. gemmata* Grote (*fastuosa* Zeller) and the common *A. punctella* Cramer, with the deep ocher-yellow ground color of the latter confined to the small dots enclosed in the blue markings.

Gnorimoschema graphicella, n. sp.

Labial palpi silvery white; second joint with a few black scales on the exterior side; terminal joint with a black annulation near base and one just before the tip. Antennæ strongly serrate towards the tip, white, with narrow brown annulations. Thorax white, sprinkled with brown anteriorly. Fore wings white, with two broad, transverse brown fasciæ; one nearly at the base of the wing, the other, which is nearly twice as broad, on the middle of the wing; both are nearly straight edged and perpendicular on the edge of the wing, though the outer one is slightly concave exteriorly; both fasciæ contain black raised scales, which in the outer fascia form four small tufts, one pair at the basal edge and one pair near the apical edge. Extreme base of costa black and tip of the wing suffused with light brown and fuscous scales. Cilia white, with a fuscous central line in the apical part, parallel with the edge of the wing. Hind wings whitish fuscous, cilia a shade lighter. Abdomen light gray, anal segment white. Legs whitish, tarsi faintly annulated with brown.

Alar expanse, 13 mm.

San Diego, Cal. (W. S. Wright).

Type.—No. 11321, U. S. National Museum. Cotype in the Merrick Museum, New Brighton, Pa.

A very pretty species, easily recognized by its striking pattern. Though quite different in ornamentation it comes probably nearest *Gnorimoschema octomaculella* Chambers, which it somewhat resembles in coloration and size.

Untomia albistrigella Chambers.

Gelechia albistrigella Chambers, Can. Ent., iv., p. 171, 1872; Dyar, List. N. Am. Lep., No. 5779, 1903; Busck, Proc. U. S. Nat. Mus., xxv, p. 890, 1903.

At the time of my revision of the Family Gelechiidæ this species was known only from Chambers's description and from the two imperfect types in the Cambridge Museum, and it could not be placed generically with any degree of safety. Thus I was obliged to leave it temporarily among the unrecognized species at the end of the genus *Gelechia*, though I pointed out that the peculiar venation, so far as it could be made out,

would exclude it from that genus and eventually be a means to the rediscovery of the species.

Lately I have obtained good specimens of this species through the kindness of Miss Annette F. Braun, whose excellent work on Chambers's old collecting grounds has done much to advance our knowledge of hitherto insufficiently known species of that author.

These specimens prove the species to belong to my genus *Untomia* (Proc. U. S. Nat. Mus., xxx, p. 727, 1907) as I had already suspected. The genus *Untomia* is correlated with *Strobisia* Clemens.

***Gelechia branella*, n. sp.**

Antennæ light ochreous, annulated with black. Labial palpi light ochreous, suffused on the outer side with fuscous; terminal joint strongly suffused with fuscous, especially anteriorly. Face light ochreous. Head and thorax darker ochreous. Fore wings dull dirty ochreous, with black spots; extreme base of costa black; a few black scales opposite on the dorsal edge; a small black dot near base; another slightly larger on the middle of the wing; a third obliquely below on the fold, and a fourth black dot at the end of the cell; above this last is a small ill-defined blackish costal spot and around the apical edge is a series of small ill-defined black dots. Cilia ochreous. Hind wings shining whitish fuscous. Abdomen ochreous. Legs ochreous, with exterior side shaded with fuscous, and with dusky tarsi. Venation typical.

Alar expanse, 13 mm.

Plummers Island, Maryland (Busck).

Type.—No. 11322, U. S. National Museum.

A pretty little species unlike any described American species of the genus, but reminding one in color and pattern of *Aristotelia quinquepunctella* Busck.

***Gelechia pseudofondella*, n. sp.**

Labial palpi ochreous white, very slightly mottled with black exteriorly and with a small black dot just before apex of terminal joint. Face and head iridescent white. Thorax ochreous white. Fore wings ochreous white, with dark blackish-brown markings; extreme base of costal and dorsal edge black; a small blackish-brown spot near base; a large outwardly-oblique costal streak from basal third of costa reaches to the fold; beyond the middle of the wing is an ill-defined dark-brown transverse fascia, reaching the dorsal edge. On the middle of the wing between these two large markings is a small blackish-brown spot. Apical fourth of the wing heavily overlaid with dark brown. Hind wings light fuscous. Abdomen ochreous fuscous. Legs light ochreous, mottled with black exteriorly. Venation typical.

Alar expanse, 14 mm.

New Brighton, Pa. (H. Engel).

Type.—No. 11323, U. S. National Museum. Cotype in the Merrick Museum.

Very similar to *Gelechia fondella* Busck; the different wing pattern easily separates it, and in the absence of connecting links it must be regarded as a good species.

Glyphidocera speratella, n. sp.

Antennæ light ochreous; in the males with a slight indication of a notch on the second joint. Labial palpi ochreous, slightly sprinkled with fuscous exteriorly. Face and head light ochreous. Thorax ochreous fuscous. Fore wing light ochreous, thickly and evenly sprinkled with darker ochreous-fuscous scales and with four rather indistinct dark-fuscous spots, one near the base, another on the middle of the wing, a third on the fold obliquely below and before the second, and a fourth, which is the largest, at the end of the cell. Hind wings light fuscous; cilia ochreous. Abdomen ochreous. Legs ochreous, mottled with black exteriorly.

Veins 7 and 9 in the fore wings stalked; vein 4 separate from stalk of veins 2 and 3.

Alar expanse, 18 mm.

New Brighton, Pa. (H. Engel).

Type.—No. 11324, U. S. National Museum. Cotype in the Merrick collection.

A large bright-colored species, nearest in size to *Glyphidocera septentrionella* Busck, but lighter.

The species of this genus much resemble each other superficially and their determination requires careful discrimination. The safest guide lies in the specific differences of the venation and the secondary sexual character of the antennæ. The highly developed male genitalia are also a help in this genus.

Depressaria nigrinotella, n. sp.

Labial palpi light yellowish brown; terminal joint shaded with black on basal half and with extreme tip black. Head light reddish brown. Thorax yellowish brown, with the anterior edge and patagia somewhat darker brown and with extreme posterior tip blackish brown. Base of the fore wings concolorous with thorax, light yellowish brown, which color is continued on the basal half of the costal edge, gradually disappearing in the darker brownish-fuscous ground color of the wing. A single, first discal, deep-black round dot; second discal spot yellowish white, edged exteriorly with black scales. Extreme base of costal edge black and entire wing sparsely sprinkled with scattered black scales. Hind wings shining light yellowish fuscous. Abdomen

yellowish. Legs yellow, sprinkled with black, tarsi with ill-defined black annulations. Veins 2 and 3 in fore wings stalked.

Alar expanse, 22 mm.

Cincinnati, Ohio (Miss A. F. Braun); Chicago, Ill. (H. McElhose).

Type.—No. 11325, U. S. National Museum.

Nearest to *Depressaria walsinghami* Busck, and *D. psoralisella* Walsingham, but larger than either and without any white scaling on first discal spot.

Depressaria amissella, n. sp.

Labial palpi light ochreous brown; terminal joint with base and a broad ring near the tip black; extreme tip ochreous. Head and thorax light ochreous brown; posterior tip of thorax blackish. Fore wings ochreous brown, sparsely sprinkled with black scales, especially on costal apical part; extreme base somewhat lighter than the rest of the wing, and this light shade faintly continued along base of costal edge; basal area sharply limited by a short perpendicular black streak from the dorsal edge. In the middle of the disc are two round, deep-black dots, placed obliquely, the first nearer the costal edge, the second nearer the fold; just before the end of the cell is an ill-defined blackish-brown blotch. Hind wings light ochreous fuscous. Abdomen ochreous fuscous. Legs dark ochreous; tarsi faintly annulated with black. Veins 2 and 3 in the fore wings stalked.

Alar expanse, 17 mm.

Kissimmee, Florida (Wm. Beutenmüller).

Type.—No. 11326, U. S. National Museum.

Nearest *Depressaria propinquella* Treitschke, of Europe, but with the dark blotch before the end of the cell much less prominent than in that species.

Depressaria pergandeella, n. sp.

Labial palpi light ochreous; tip of brush and terminal joint darker. Face whitish ochreous. Head light ochreous brown. Thorax dark fuscous brown. Forewings light brown, sprinkled with sparse single black scales; basal area and basal part of costal edge hardly lighter than the rest of the wing; extreme base of costa and a small dorsal spot near base black. Two small round black dots on the middle of the disc are placed obliquely, the basal one nearest the costal edge, and are followed by a somewhat superiorly placed, ill-defined blackish-brown blotch. A small, single black dot at the end of the cell is also followed by a darker shadow. Around terminal and apical edge is a faint row of black spots. Hind wings shining light yellowish fuscous.

Abdomen dark yellowish fuscous. Legs ochreous, nearly unmottled. Veins 2 and 3 in fore wings stalked.

Alar expanse, 21 mm.

Nebraska.

Type.—No. 11327, U. S. National Museum.

The type of this species was sent to Prof. C. H. Fernald several years ago from Mr. Theo. Pergande for name; on a visit to Amherst in October, 1902, Professor Fernald gave me the specimen and asked me to describe it and to utilize his manuscript name, which I am pleased to do.

The specimen has remained a unique in the National Museum, but the species is very distinct from any described American species and may as well be published.

Depressaria gelidella, n. sp.

Labial palpi purplish black on the exterior side and touched with carmine; the inner side yellowish white, extreme tip of terminal joint white. Head light gray. Thorax dark purplish gray, patagia purplish black. Ground color of the fore wings dark purplish fuscous, sparsely sprinkled with black scales; near the base is a transverse yellowish-white streak from dorsal edge, not reaching costa. On the disc is a crescent-shaped black streak touched in the center with white and carmine. At the end of the cell is a small round black dot, heavily edged posteriorly with white. Costal edge mottled with black and yellowish white; terminal edge with a nearly continuous black line before the cilia. The entire dorsal and apical part of the wing is tinted with carmine, which is especially prominent just below apical third of costal edge and in a broad streak along the middle of the dorsal edge. Hind wings light yellowish fuscous. Legs yellowish white on the inner side, purplish black exteriorly.

Alar expanse, 20 mm.

Winnipeg, Manitoba, Canada (A. W. Hanham).

Type.—No. 11328, U. S. National Museum.

This species is very similar in coloration and markings to *Depressaria conterminella* Zeller, of Europe, except for its dark colored thorax.

Depressaria maculatella, n. sp.

Labial palpi ochreous white; brush short and even, slightly sprinkled with darker ochreous scales; terminal joint slightly thickened with scales in front, white, with dark-brown base and blackish tip. Antennæ dark brown. Face ochreous white; head and thorax mottled with ochreous; patagia brown. Ground color of fore wings ochreous white, thickly and evenly sprinkled with darker ochreous and fuscous scales; at ex-

treme base of costa is a short, transverse, oblique, blackish-brown line interrupted in the middle; both discal spots inconspicuous, white, edged with dark-brown scales; between and slightly above these spots is a blackish-brown longitudinal streak; above and somewhat outside of this streak are two smaller similarly colored streaks, the upper one touching costal edge and the interval between these three streaks light brown. The veins, especially 9 and 10, are more or less indicated by scattered longitudinal dark-brown scales; around entire apical and tornal edge is a row of well-defined short dark-brown spots. Hind wings light whitish fuscous; underside mottled with dark transverse striations and with interrupted black line before the cilia; cilia white. Abdomen ochreous. Legs light ochreous, tarsal joints annulated with dark brown. Veins 2 and 3 in fore wings separate.

Alar expanse, 22-23 mm.

New Brighton, Pa. (H. D. Merrick); Ontario, Canada (A. W. Hanham).

Type.—No. 11329, U. S. National Museum.

Nearest, though not very near, to *Depressaria heracliana* De Geer, with similar wing pattern, but of smaller size and with whiter ground color and hind wings.

Depressaria juliella, n. sp.

Second joint of labial palpi ochreous, brush tipped with brick-red and exterior side mottled with red; terminal joint red, shaded with black at base and just before the apex. Face iridescent white; head ochreous mixed with red. Thorax red. Ground color of the fore wings light ochreous, but so heavily overlaid with brick-red and reddish ochreous as to be nearly obscured, especially along the edges of the wing. Near base is a small, dorsal blackish spot. Both discal spots ill-defined, longitudinal, very dark red, nearly black; intervening space whitish ochreous, the terminal and apical veins faintly indicated by thin dark-red lines. Cilia red. Hind wings thin, transparent, light fuscous, whitish towards the base, reddish towards the tip, with a darker line around the edge before the reddish cilia. Abdomen ochreous. Legs ochreous mottled with red. Veins 2 and 3 in fore wing separate, veins 3 and 4 in hind wings stalked.

Alar expanse, 24 mm.

Pecos, N. Mex. (T. D. A. Cockerell).

Type.—No. 11330, U. S. National Museum.

This species is very near the European *Depressaria nervosa* Haworth, of which there is a good European series in the U. S. National Museum, and which Lord Walsingham recorded from southern Oregon. I omitted to take notes on Lord Walsingham's specimen thus determined, while I studied the types

in the British Museum, and I can offer no opinion on the determination, but I should not be surprised if it is referable to the present species, which has somewhat narrower and more pointed wings and a more vivid red coloration.

Ethmia lassenella, n. sp.

Labial palpi weakly developed, blackish fuscous, with a few whitish hairs at base of the brush. Antennæ blackish brown. Head and thorax dark fuscous, nearly black. Fore wings dark fuscous; near the base is a central, round orange-yellow and red dot; following this is a deep-black streak on the fold; on the middle of the fold is a similar, but larger, short, longitudinal black streak; on the middle of the wing is a round black dot, and at the end of the cell is an orange-yellow and red spot, edged anteriorly and posteriorly with black. Hind wings of the male white, with a broad dark-fuscous border and with a long pencil of soft yellow hairs at the base of costa; in the female the white is limited to a basal and costal diffused shade and there is no hair-pencil at base of costa. Abdomen dark bluish fuscous above and below; in the female with the extreme tip orange-red; in the male the anal tuft is concolorous with the abdomen. Legs blackish fuscous.

Alar expanse, 17-18 mm.

Redington, Arizona.

Type.—No. 11332, U. S. National Museum.

Named in honor of Miss Birgitte Lassen, whose conscientious work in mounting Microlepidoptera makes their study easy.

This species belongs in the same group as *umbrimarginella* Busck, *coquilletella* Busck, and *albitogata* Walsingham, and is intermediate between the two former; it is easily distinguished from the first by its smaller size and the absence of the central, longitudinal yellow streak as found in that species; from the second, by its orange spots and the dark underside of the abdomen.

Scardia caryophyllella, n. sp.

Labial palpi dark purplish brown, with inner side, apex of second joint, and base and apex of terminal joint light ochreous. Face and head light ochreous. Antennæ dark purplish brown, with narrow ochreous annulations. Thorax ochreous mixed with fuscous; patagia dark fuscous with ochreous tips. Ground color of fore wings light ochreous, extensively overlaid with dark purplish-brown markings. A large rectangular purplish-brown spot near base crosses the fold, but does not reach the costal edge; a similarly colored triangular spot has its base on the fold and one corner on the middle of the dorsal edge; a large four-cornered dark-brown spot on the middle of the

costal edge reaches with its outer edge nearly down to the fold; these three large spots are more or less confluent and inclose a basal and costal area which is rather more darkly mottled by transverse brown striation than the dorsal and apical part of the wing. At apical fourth begins a dark-brown transverse streak parallel with termen, with the rather sharply-defined outer edge undulate and emphasized by a light yellow line, while towards the base it is less sharply separated from the brown mottled ground color. Just before apex is a small, dark-brown costal spot and in the light spaces between these more pronounced costal spots are small, dark-brown costal dots. Along the terminal edge are two separated dark-brown lines parallel with the edge. Cilia ochreous mixed with dark brown. The entire wing has a strong purplish sheen. Hind wings light purplish fuscous. Legs light ochreous, the two anterior pairs with brown annulation on the tarsi.

Alar expanse, 32 mm.

Fieldbrook, Cal. (H. S. Barber). Larva in fungus on oak.
Type.—No. 11338, U. S. National Museum.

This large striking species resembles *Scardia coloradella* Dietz in size and form, but is easily separated by its pattern; the fore wings are more glossy than those of any other described American species.

Scardia fiskeella, n. sp.

Labial palpi dark brown, with tip of second joint and base and tip of apical joint light ochreous. Antennæ blackish brown, with narrow ochreous annulations. Face and head dirty yellow. Thorax dark purplish brown, with tip of patagia and posterior tuft ochreous. Fore wings comparatively broad and rounded at apex; light ochreous and dark purplish brown; the entire costal and basal area to down below the fold is dark brown; the dorsal and terminal part is ochreous and projects up into the dark color with two rounded lobes, one rather shallow near base, another smaller but deeper on the middle of the wing; on the costal edge are four faintly geminate ochreous spots; two on basal and two on the apical part of the costa; the ochreous dorsal and terminal area faintly mottled with short, transverse dark-brown striation; in the ochreous apical area are two small brown marginal spots and along the terminal edge is a row of four dark-brown spots, which emit dark streaks into the ochreous cilia. Hind wings light purplish fuscous. Abdomen ochreous. Legs ochreous, tarsi annulated with brown.

Alar expanse, 26 mm.

Tryon, N. Car. (W. F. Fiske).
Type.—No. 11339, U. S. National Museum.

Named in honor of the collector.

This species is intermediate in size and form of the wing between the next following species and *Scardia fuscofasciella* Chambers, but distinguished from both by the absence of transverse pattern.

Scardia pravatella, n. sp.

Labial palpi ochreous, mottled with dark brown exteriorly and on the brush and with a brown ring around the middle of the terminal joint. Antennæ yellowish fuscous, annulated with dark fuscous. Face and head dirty yellowish fuscous. Thorax dirty ochreous, sprinkled with fuscous anteriorly. Fore wings rather broad and rounded at apex, dirty ochreous, with a purplish sheen and with dark-brown markings. Basal third of the wing profusely mottled with brown and with a few large, ill-defined, confluent brown blotches; after this follows a broad, transverse, nearly unmottled dirty-yellow area, oblique nearest the base on dorsal side and sharply angulated outwardly, where it is limited by a broad, dark-brown transverse area; costal edge marked with many small brown dashes nearly equidistant and with three somewhat larger quadrate spots, one on basal third, one just outside the middle of the wing, and one before apex; the latter begins a transverse row of ill-defined brown spots parallel with the terminal edge; termen with one small and two larger dark-brown spots, which emit dark rays out into the otherwise light ochreous cilia. Hind wings light ochreous fuscous. Abdomen ochreous. Legs ochreous, anterior pairs mottled with dark brown exteriorly.

Alar expanse, 23 mm.

New Brighton, Pa. (H. D. Merrick).

Type.—No. 11340, U. S. National Museum.

This species is nearest to *Scardia fuscofasciella* Chambers and has nearly the same ornamentation and outline of wing, but it is considerably smaller and with more defined dark basal third of the fore wings.

Scardia errandella, n. sp.

I give this new name to the American species which has for many years been recorded as the European *Scardia tessulatella* Zeller, and which is well described by Doctor Dietz under that name (*Trans. Am. Ent. Soc.*, xxxi, p. 26, 1905). Doctor Dietz did not have European specimens and made his identification of his British Columbia specimen from the description, with which it agrees in a general way. But the American species differs in several respects and is certainly distinct from *tessulatella*, though it eventually may prove only a small variety of

Scardia burkerella Busck, bred from a fungus in Washington. At present I prefer to retain it under a separate name.

Washington State (Wm. Beutenmüller).

Type.—No. 11341, U. S. National Museum.

A COMPARATIVE STUDY OF THE THORAX IN ORTHOPTERA, EUPLEXOPTERA AND COLEOPTERA.

By R. E. SNODGRASS.

(PLATES II-V.)

INTRODUCTORY.

The anatomical facts described and illustrated in this paper are presented simply on a basis of their own interest. In showing that there are certain points of resemblance between the Euplexoptera and the Orthoptera on the one hand and the Coleoptera on the other the author does not undertake to set forth the phylogeny of these orders. It is probably not impossible that the Coleoptera may have some relationship to the Euplexoptera, notwithstanding their metamorphosis, yet the characters here discussed do not constitute sufficient evidence for any theory of coleopteran descent.

The material made use of is selected from data accumulated by the author while working under Dr. A. D. Hopkins on the anatomy of the external parts of beetles in connection with Doctor Hopkins's systematic and economic work on the Scolytidæ. A more comprehensive and comparative account of the insect thorax and the wing articulation is reserved for future publication.

GENERAL.

Before going into the more special description of the forms discussed it will be well to review the general anatomy of the parts involved, *i. e.*, the microthorax and the notal and pleural regions of the other three thoracic segments. Probably the most extensive comparative studies of the external anatomy of the lower insects are those published by Verhoeff during the last few years. His monograph on the morphology of the insect thorax^a is the only work that will be referred to in this paper.

^a Verhoeff, K. W.—Beiträge zur vergleichenden Morphologie des Thorax der Insekten. < Nova Acta. Abh. der Kaiserl. Leop.-Carol. Deut. Akad. der Naturforscher, LXXXI, No. 2, pp. 63-109, Pls. VII-XIII.